

WO 03/064473

burioni.ST25.txt
SEQUENCE LISTING

<110> Burioni, Roberto

<120> HUMAN MONOCLONAL ANTIBODY FAB FRAGMENTS DIRECTED AGAINST HCV E2
GLYCOPROTEIN AND ENDOWED WITH IN VITRO NEUTRALIZING ACTIVITY

<130> 30068

<150> IT RM2002A/000049

<151> 2002-01-30

<160> 24

<170> PatentIn version 3.1

<210> 1

<211> 119

<212> PRT

<213> Homo sapiens

<400> 1

Leu Leu Glu Gln Ser Gly Ala Glu Val Lys Met Pro Gly Ala Thr Val
1 5 10 15Lys Val Ser Cys Gln Ser Ser Arg Tyr Thr Phe Thr Ser Tyr Gly Ile
20 25 30Gly Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Trp
35 40 45Ile Ser Gly Tyr Thr His Glu Thr Lys Tyr Ala Gln Ser Phe Gln Gly
50 55 60Arg Val Thr Met Thr Ala Glu Thr Ser Thr Gly Thr Ala Tyr Met Glu
65 70 75 80Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Thr Tyr Tyr Cys Ala Arg
85 90 95Asp Gly Gly Gly Arg Val Val Val Pro Pro Thr His Leu Arg Ala Phe
Pagina 1

100

burioni.ST25.txt
105

110

Asp Val Trp Gly Gln Gly Thr
115

<210> 2

<211> 104

<212> PRT

<213> Homo sapiens

<400> 2

Met Ala Glu Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1 5 10 15Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser His Arg Val Asn Asn Asn
20 25 30Phe Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45Ile Ser Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
50 55 60Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65 70 75 80Pro Asp Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Asp Ser Pro
85 90 95Leu Tyr Ser Phe Gly Gln Gly Thr
100

<210> 3

<211> 124

<212> PRT

<213> Homo sapiens

<400> 3

Leu Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln Thr Leu Ser
1 5 10 15Leu Thr Cys Thr Val Ser Gly Val Ser Ile Ser Tyr Gly Gly Arg Gly
20 25 30Val Ser Tyr Trp Gly Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu
Pagina 2

```

burioni.ST25.txt
35          40          45
Trp Ile Gly His Ile Tyr Tyr Phe Gly Asp Thr Phe Tyr Asn Pro Ser
50          55          60
Leu Asn Asn Arg Ala Thr Ile Ser Ile Asp Ser Ser Lys Asn Gln Phe
65          70          75
Ser Leu Lys Leu Lys Ser Val Thr Ala Ser Asp Thr Ala Leu Tyr Phe
85          90          95
Cys Ala Arg Ser Thr Leu Gln Tyr Phe Asp Trp Leu Leu Thr Arg Glu
100          105          110
Ala Ala Tyr Ser Ile Asp Phe Trp Gly Gln Gly Ile
115          120

```

<210>	4
<211>	102
<212>	PRT
<213>	Homo sapiens

<400> 4

```

Met  Ala  Glu  Leu  Thr  Gln  Ser  Pro  Ser  Phe  Leu  Ser  Ala  Ser  Val  Gly
1      5      10     15

Asp  Arg  Val  Thr  Ile  Thr  Cys  Arg  Ala  Ser  Gln  Gly  Val  Thr  Ile  Leu
      20     25     30

Leu  Ala  Trp  Tyr  Gln  Gln  Lys  Pro  Gly  Lys  Pro  Pro  Lys  Ala  Leu  Ile
      35     40     45

Tyr  Ala  Ala  Ser  Ser  Leu  Gln  Ser  Gly  Val  Pro  Ser  Arg  Phe  Ser  Gly
      50     55     60

Ser  Gly  Ser  Asp  Thr  Asp  Phe  Thr  Leu  Thr  Ile  Ser  Ser  Leu  Gln  Pro
65     70     75     80

Glu  Asp  Ser  Ala  Thr  Tyr  Tyr  Cys  Gln  Gln  Leu  Asn  Thr  Tyr  Pro  Trp
      85     90     95

Thr  Phe  Gly  Gln  Gly  Thr
      100

```

<210>	5
<211>	116
<212>	PRT

burioni.ST25.txt

<213> Homo sapiens

<400> 5

Leu Leu Glu Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val
 1 5 10 15

Lys Val Ser Cys Lys Ala Ser Gly Asp His Tyr Gly Ile Asn Trp Val
 20 25 30

Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Gly Ile Ile Pro
 35 40 45

Val Phe Gly Thr Thr Thr Tyr Ala Gln Lys Phe Gln Gly Arg Ala Thr
 50 55 60

Ile Thr Ala Asp Asp Ser Thr Gly Thr Ala Phe Leu Glu Leu Thr Arg
 65 70 75 80

Leu Thr Phe Asp Asp Thr Ala Val Tyr Phe Cys Ala Thr Pro His Gln
 85 90 95

Leu His Val Leu Arg Gly Gly Lys Ala Leu Ser Pro Trp Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr
 115

<210> 6

<211> 102

<212> PRT

<213> Homo sapiens

<400> 6

Met Ala Glu Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Asn
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Arg Gly Gln Ala Pro Ser Leu Leu Ile
 35 40 45

Tyr Gly Thr Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser

```

65                               burioni.ST25.txt                               80
                               75
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Asp Trp Pro Ser
                               85                               90                               95
Thr Phe Gly Gln Gly Thr
                               100

```

<210> 7

$\langle 211 \rangle$ 120

<212> PRT

<213> Homo sapiens

<400> 7

Leu Leu Glu Gln Ser Gly Ser Glu Val Lys Val Pro Gly Ser Ser Leu
1 5 10 15

Lys Val Ser Cys Lys Thr Ser Gly Gly Thr Phe Ser Thr Tyr Thr Phe
20 25 30

Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Gly
35 40 45

Ile Thr Pro Ile Ile Gly Ile Ala Asn Tyr Ala Arg Asn Phe Gln Asp
50 55 60

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Val Tyr Met Glu
65 70 75 80

Val Arg Arg Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
85 90 95

Thr Ser Glu Val Thr Ala Thr Arg Gly Arg Thr Phe Phe Tyr Ser Ala
100 105 110

Met Asp Val Trp Gly Gln Gly Thr
115 120

<210> 8

<211> 102

<212> PRT

<213> Homo sapiens

<400> 8

Met Ala Glu Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
Pagina 5

burioni.ST25.txt

1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Trp Thr Glu Phe Thr Leu Thr Ile Ser Arg Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Leu Asn Thr Tyr Pro Trp
 85 90 95

Thr Phe Gly Gln Gly Thr
 100

<210> 9

<211> 118

<212> PRT

<213> Homo sapiens

<400> 9

Leu Leu Glu Gln Ser Gly Ser Glu Val Lys Lys Pro Gly Ser Ser Val
 1 5 10 15

Arg Val Ser Cys Thr Thr Ser Gly Gly Thr Leu Ser Asp Tyr Gly Phe
 20 25 30

Asn Trp Leu Arg Gln Ala Pro Gly Gln Gly Pro Glu Trp Met Gly Gly
 35 40 45

Ile Ile Pro Leu Phe Arg Arg Thr Thr Tyr Gly Gln Lys Phe Gln Gly
 50 55 60

Arg Leu Thr Ile Thr Ala Asp Glu Ser Thr Gly Ala Thr Tyr Met Glu
 65 70 75 80

Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 85 90 95

Glu Lys Val Ser Val Leu Thr Gly Gly Lys Ser Leu His Tyr Phe Glu
 100 105 110

Tyr Trp Gly Lys Gly Thr

burioni.ST25.txt

115

<210> 10

<211> 102

<212> PRT

<213> Homo sapiens

<400> 10

Met Ala Glu Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Arg
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Arg Gly Gln Ala Pro Ser Leu Leu Ile
 35 40 45

Tyr Asp Thr Ser Ser Arg Ala Thr Gly Val Pro Ala Arg Phe Ser Ala
 50 55 60

Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
 65 70 75 80

Glu Asp Phe Ala Leu Tyr Tyr Cys Gln Gln Tyr Asn Asp Trp Pro Ser
 85 90 95

Thr Phe Gly Gln Gly Thr
 100

<210> 11

<211> 118

<212> PRT

<213> Homo sapiens

<400> 11

Leu Leu Glu Glu Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val
 1 5 10 15

Lys Val Ser Cys Lys Thr Ser Gly Asp Thr Phe Arg Tyr Gly Ile Thr
 20 25 30

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Gln Ile
 35 40 45

Met Pro Thr Phe Ala Thr Ala Thr Tyr Ala Gln Arg Phe Gln Gly Arg
 Pagina 7

```

burioni.ST25.txt
      50              55              60
Val Thr Ile Ser Ala Asp Glu Ser Thr Ser Thr Ala Tyr Leu Glu Val
65          70          75          80
Arg Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Thr Pro
85          90          95
Arg Gln Val Thr Ile Leu Arg Gly Pro Lys Ala Leu Ser Pro Trp Asp
100        105        110
Tyr Trp Gly Gln Gly Thr
115

```

<210>	12
<211>	102
<212>	PRT
<213>	Homo sapiens

```

<400> 12
Met Ala Glu Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1      5      10     15
Glu Arg Ala Ser Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Asn
20     25     30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35     40     45
Ser Gly Ala Ser Thr Arg Ala Thr Gly Val Pro Ala Arg Phe Ser Gly
50     55     60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65     70     75     80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Asn Trp Pro Pro
85     90     95
His Phe Gly Gln Gly Thr
100

```

<210>	13
<211>	357
<212>	DNA
<213>	Homo sapiens

burioni.ST25.txt

<400> 13
 ctgctcgagc agtctggagc tgaggtgaag atgcctgggg ccacagtga ggtctcctgc 60
 cagtcttccc gttacacctt caccagttac ggtatcggct gggtgcgaca gggccctgga 120
 caggggcttg agtggatggg atggatcagc ggatacaccc atgagacaaa atatgcacag 180
 agtttccagg gcagagtcac catgaccgca gagacatcca cgggcacagc gtatatggag 240
 ttgaggagcc tgcggtctga cgacacggcc acatattact gcgcgagaga tggaggaggg 300
 aggggtggtag tgccgcctac tcattctacgt gcttttgatg tctggggtca agggacg 357

<210> 14

<211> 312

<212> DNA

<213> Homo sapiens

<400> 14
 atggccgagc tcaccagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60
 ctctcctgca gggccagtca cagagtcaat aacaacttct tagcctggta tcagcagaaa 120
 cctggccagg ctcccaggct cctcatctct ggtgcatcta ccagggccac tggcatccca 180
 gacaggttca gtggcagtgg gtctggaaca gacttcactc tcaccatcag cagactggag 240
 cctgatgatt ttgcagttta ttattgtcag cagtatgggtg actcacctct ttattctttt 300
 ggccagggga cc 312

<210> 15

<211> 372

<212> DNA

<213> Homo sapiens

<400> 15
 ctgctcgagt ctggcccagg actggtgaag ccttcacaga ccctgtccct cacctgcacc 60
 gtctccggtg tctccatcag ttacgggtgt cgtggcgttt cctactgggg ttgggtccgc 120
 cagtccccag ggaagggcct ggagtggatt ggccacatct actactttgg agacaccttc 180
 tacaacccgt ccctcaacaa tcgagctacc atatcaatag actcatccaa aaaccagttc 240
 tccctcaagc tcaagtctgt gactgcctca gacacggccc tgtatttctg tgccaggagc 300
 accctacagt attttgactg gttattgaca cgggaggctg cctactccat tgacttctgg 360
 ggccagggaa ta 372

<210> 16

<211> 306

burioni.ST25.txt

<212> DNA

<213> Homo sapiens

<400> 16

```

atggccgagc tcacccagtc tccatccttc ctgtctgcat ctgttgaga ccgagtcacc    60
atcacttgcc gggccagtca gggcgtcacc attcttttag cctggtatca gcaaaagcca    120
gggaaacccc ctaaggccct gatattatgct gcatcgctctt tgcaaagtgg ggtcccatca    180
aggttcagcg gcagtgggtc tgacacagat ttcactctca caatcagcag cctacagcct    240
gaagattctg caacttatta ctgtcaacaa cttaacactt acccgtggac gttcggccag    300
gggacc                                           306

```

<210> 17

<211> 348

<212> DNA

<213> Homo sapiens

<400> 17

```

ctgctcgagc agtcaggggc tgaggtgaag aagcctgggt cctcggtgaa ggtctcctgc    60
aaggcttctg gagaccacta tgggtatcaac tgggtgcgac agggccctgg acaagggctg    120
gagtggatgg gcggtatcat ccctgtcttt ggcacaacta cctacgcaca gaagttccag    180
ggcagagcca ccattaccgc ggacgactcc acggggacgg cctttttgga gctgaccaga    240
ctgacatttg acgacacggc cgtctatttc tgtgcgacac ctcaccaact gcatgtcctc    300
cggggcggtg aagccctctc cccctgggac tactggggcc aggggaacc                348

```

<210> 18

<211> 306

<212> DNA

<213> Homo sapiens

<400> 18

```

atggccgagc tcacccagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc    60
ctctcctgca gggccagtca gagtgttagc agtaacttag cctggtacca gcagaaacgt    120
ggccaggctc ccagtctcct catctacgga acatctacca gggccactgg tatcccagcc    180
aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagcag cctgcagtct    240
gaagattttg cagtttatta ctgtcagcag tataatgatt ggccctccac cttcggccaa    300
gggaca                                           306

```

burioni.ST25.txt

<210> 19

<211> 360

<212> DNA

<213> Homo sapiens

<400> 19

ctgctcgagc agtctgggtc tgaagtaaaa gtgcccgggt cctcgttgaa ggtctcctgc	60
aagacttctg gaggcacctt cagcacctat actttcagct ggggtgcgaca ggcccctgga	120
cagggacttg agtggatggg ggggatcacc cctatcattg gcatcgcaaa ctacgcacgg	180
aacttcagg acagagtcac catcacgcg gacgaatcca cgagcacggt ctacatggag	240
gtgaggaggc tgagatctga ggacacggcc gtatattatt gtgcgaaaac ttcggaagta	300
acagccacta gagggcggac tttcttctac tccgctatgg acgtctgggg tcaagggacc	360

<210> 20

<211> 306

<212> DNA

<213> Homo sapiens

<400> 20

atggccgagc tcaccagtc tccatccttc ctgtctgcat ctgtaggaga cagagtcacc	60
atcacttgcc gggccagtca gggcataagc aattatcttag cctggatatca gcaaaaacca	120
gggaaagccc ctaagtcct gatctatgct gcatccactt tgcaaagtgg ggtcccatcg	180
aggttcagcg gcagtggatc ttggacagaa ttcactctca caatcagccg cctccagcct	240
gaagattttg caacttatta ctgtcaacac cttataactt acccgtggac gttcggccaa	300
gggacc	306

<210> 21

<211> 354

<212> DNA

<213> Homo sapiens

<400> 21

ctgctcgagc agtctgggtc tgaggatgaag aaacctgggt cctcgggtgag ggtctcgtgc	60
acgacttctg gaggcacctt gagcgactat ggtttcaact ggttacgaca ggcccctgga	120
caagggcctg agtggatggg agggatcatc cttttgtttc gaagaacaac ctacggacag	180
aagttccagg gcagactcac cattaccgcg gacgagtcca cgggcgcaac ctacatggag	240

burioni.ST25.txt

ctgagcagcc tgagatctga cgacacggcc gtctattact gtgcgagaga gaaagtttcg	300
gtcctcacag gcggaaagtc actccattac tttgaatatt ggggcaaggg aacc	354

<210> 22

<211> 306

<212> DNA

<213> Homo sapiens

<400> 22	
atggccgagc tcacgcagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc	60
ctctcctgca gggccagtca gagtgttagc agcaggtagg cctggtacca gcagaaacgt	120
ggccaggctc ccagtctcct catctatgac acatcttcca gggccactgg tgtcccagcc	180
aggttcagtg ccagtgggtc tgggacgcag ttcactctca ccatcagcag cctgcagtct	240
gaagattttg cactttatta ctgtcagcag tataatgatt ggccctccac cttcggccaa	300
gggaca	306

<210> 23

<211> 354

<212> DNA

<213> Homo sapiens

<400> 23	
ctgctcgagg agtctggggc tgagggtgaag aagccagggt cctcgggtgaa ggtctcctgc	60
aagacttctg gagacacctt cagatatggt atcacgtggg tgcgacaggc ccctggacaa	120
gggcttgagt ggatgggaca gatcatgcct acgtttgcga cagcaacctc cgcacagagg	180
ttccagggca gagtacgat ttccgcggac gaatccacga gcacagccta cttggagggtg	240
cgcagcctga gatctgaaga cacggccgctc tattactgtg cgacacctcg ccaagttact	300
atacttcggg gacctaaagc cctctcccct tgggactact ggggccaggg aacc	354

<210> 24

<211> 306

<212> DNA

<213> Homo sapiens

<400> 24	
atggccgagc tcacccagtc tccagccacc ctgtctgcgt ctccagggga aagagcctcc	60
ctctcctgca gggccagtca gagtgttagt agcaacttag cctggtacca gcagaaacct	120

burioni.ST25.txt
ggccaggctc ccaggctcct catctctggt gcatccacca gggccactgg tgtcccggcc 180
aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagtag cctgcagtct 240
gaagattttg cagtttatta ctgtcagcag tataataact ggcctcccca ctttggccag 300
gggacc 306